The 1998 Pediatric Nutrition Surveillance Executive Summary

The state of Missouri has participated in the Pediatric Nutrition Surveillance System (PedNSS) since 1988. The PedNSS was established in 1973 by the Division of Maternal and Child Health, Centers for Disease Control and Prevention (CDC). The PedNSS has monitored key indicators of nutritional status of low-income children in the United States who participate in publicly funded health and nutrition programs such as the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). A total of 205,314 records from 120 agencies in 114 counties and St. Louis City were submitted to CDC for data analysis in 1998.

This report provides:

- Overall nutrition status trends of low-income children aged 0-4 years who participate in the WIC program in Missouri;
- Trends of prevalence rates of health and nutrition indicators from 1993 to 1998;
- A comparison of prevalence rates of health and nutrition indicators and demographic information among the districts in 1997 and 1998;
- Progress of the Missouri WIC program toward meeting the Healthy People 2000 and Healthy Missourians 2000 objectives; and
- Information on nutrition status of low-income children to aid health professionals in program planning.

Nutrition Status Indicators

The key nutritional status indicators monitored in PedNSS are: 1) short stature, 2) underweight, 3) overweight, 4) low birth weight, and 5) anemia. In addition, the information of the initiation and duration of breastfeeding and data quality of the Missouri PedNSS are reported.

Sociodemographic Characteristics

In 1998, of the 205,314 participants in the Missouri PedNSS, 71.5% were White, 22.9% Black, 3.4% Hispanic, 0.8% Asian, 0.2% American Indian, and 1.1% All Others. In the 1998 Missouri PedNSS, all records were obtained from children aged 0 to 4 years who participated in the WIC program.

Short Stature

Short stature is defined as less than the 5th percentile of the height- or length-for-age of the NCHS/CDC reference.[2] The prevalence of short stature in the Missouri PedNSS has steadily decreased from 9.9% in 1993 to 8.2% in 1998. Although the highest prevalence (13.3%) was found among Black infants less than one year of age, the rate for this population has slightly decreased from 13.5% in 1997 to 13.3% in 1998. A goal of the Healthy People 2000 and Healthy Missourians 2000 is to reduce growth retardation among low-income children age 5 and younger to less than 10%.[3] The Missouri PedNSS has met the Healthy People 2000 goal with an overall rate of 8.2%; however, this objective has not been met among children aged less than one year old (10.7%).

Underweight
Underweight is defined as less than the 5th percentile of the weight-for-height or -length of the NCHS/CDC reference.[2] The prevalence of underweight has steadily decreased from 3.0% in 1993 to 1.9% in 1998. Asian and Black children had high prevalence of underweight of 3.4% and 3.1%, respectively.

The rates in the Southeastern and Northwestern/Metro districts in 1998 have decreased compared to 1997; whereas, the rates in other districts have increased. The Eastern district had the highest rate (3.1%) and the Northwestern/Cameron district had the lowest rate (1.3%). The Healthy People 2000 objective of keeping the rate of underweight to less than 5% has been achieved in the Missouri PedNSS population.[3]

Overweight
The prevalence of obesity among children in the low-income population is one of the most serious nutrition-related problems and a growing public health concern in the United States and in Missouri.[4] Overweight is defined as above the 95th percentile of the weight-for-height or -length of the NCHS/CDC reference.[2]

The prevalence rate has consistently increased from 7.3% in 1993 to 8.7% in the 1998 Missouri PedNSS. Hispanic children had the highest prevalence rate of 12.0% among all ethnic groups. The Southeastern district had the highest overweight prevalence rate of 9.7% among all districts.

Low Birth Weight
Low birth weight is the single most important factor reflecting neonatal mortality.[5,6]
In 1998, 9.4% of infants were low birth weight, defined as weighing less than 2500 grams or 5.5 pounds at birth.

The incidence rate of low birth weight in the Missouri PedNSS has slightly increased from 9.2% in 1993 to 9.4% in 1998. The highest incidence was found among Black children and the rate has increased from 13.5% in 1997 to 13.7% in 1998. Likewise, the incidence rate among White children has increased slightly from 8.1% in 1997 to 8.2% in 1998.

The Northwestern/Metro and Eastern districts had higher rates than the state average at 10.5% and 11.2%, respectively. The Healthy People 2000 and Healthy Missourians 2000 objectives to reduce the low-birth-weight rate to no more than 5.0% of all live births have not been met in the Missouri PedNSS population.[3]

Anemia
Iron-deficiency anemia can occur due to lack of iron in the diet.[7] In PedNSS, anemia is defined as hemoglobin and/or hematocrit levels less than the 5th percentile values of a reference population.[1] The prevalence of anemia in the Missouri PedNSS population has steadily decreased from 27.6% in 1993 to 19.7% in 1998. Across ethnic groups, Black children had the highest rate of 29.6%. The rate among Black children in the Missouri PedNSS has decreased from 36.3% in 1993 to 29.6% in 1998. The prevalence

rates of anemia among districts vary, ranging from 13.4% in the Southwestern district to 24.8% in the Eastern district.

The Healthy People 2000 objective is to reduce the prevalence of low hemoglobin/hematocrit among low-income children aged 1 to 2 years to less than 10% and to less than 5% for 3 to 4 year olds.[3] The Healthy People 2000 goals have not been achieved in the Missouri PedNSS population.

Infant Feeding Practices

Exclusive breastfeeding is recommended as ideal nutrition and is sufficient to support optimal growth and development for approximately the first 6 months after birth.[8] Benefits of the use of human milk for infants and mothers have been recognized.[9] Breastfeeding initiation rate has increased from 33.6% in 1993 to 43.9% in 1998. The initiation rate of breastfeeding in Black mothers has increased from 26.1% in 1997 to 31.2% in 1998. In Missouri PedNSS, the rate of breastfeeding duration for 6 months has decreased from 24.7% in 1997 to 24.1% in 1998.

The Healthy People 2000 objective is to increase to at least 75% the proportion of mothers who breastfeed their babies in the early postpartum period and to at least 50% the proportion who continue breastfeeding until their babies are 5 to 6 months old.[3] In the Missouri PedNSS population, this objective has not yet been achieved.

Conclusions and Recommendations

The Missouri PedNSS has shown stable progress in reducing the prevalence of anemia although the Healthy People 2000 objective for anemia has not been met. The rate has decreased by 28% from 1993 to 1998. Among Black children, the rate of anemia has decreased by 18% from 1993 to 1998.

The Healthy People 2000 objectives that pertain to reducing the prevalence of low birth weight and to increasing the initiation and duration of breastfeeding rates have not been achieved in the Missouri PedNSS population. Although the Healthy People 2000 objectives do not specify children's overweight problems, the overweight prevalence has increased by 19% between 1993 and 1998 in the Missouri PedNSS.

To meet the Healthy People 2000 and Healthy Missourians 2000 health objectives for maternal and child nutrition in low-income populations, more concerted efforts are needed to deliver nutrition and health messages to targeted populations and to strengthen the delivery of support services. Programs should be developed based on problems and needs that have been identified from available data.